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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Atsushi Mori

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EXAMINER

DEGHAN, QUEENIE S

ART UNIT

PAPER NUMBER

1791

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,179	Applicant(s) MORI ET AL.	
	Examiner QUEENIE DEGHAN	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-23 and 25-36 is/are pending in the application.
- 4a) Of the above claim(s) 22, 23 and 25-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 33 recites "comprises taking the mold". It is unclear what is meant by "taking the mold". How is this related to the removal of the glass?

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 21 and 30-336 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al. (2006/0033983) in view of Jakobsen et al. (7,155,097) and Burger et al. (2003/0045421) and Ohishi et al. (EP 1 285 891). Dai et al. teaches a method for manufacturing an optical fiber comprising molding tellurite glass melt in a mold and then inserting the preform into jacket tube composed of tellurite glass ([0085]-[0087]). However, Dai does not teach a preform with concave portions or a mold with convex portions. Jakobsen et al. teach a method for manufacturing an optical fiber preform comprising providing a polygon columnar glass preform with a plurality of concave portions on the periphery that runs parallel to a longitudinal axis in succession from a first end to a spaced apart second end (figure 4, col. 5 lines 28-62), wherein the preform is manufacture via a mold with a corresponding shape (col. 6 lines 28-31). Jakobsen also teaches inserting the preform into a cylindrical jacket tube (col. 18 line 66 to col. 19 line 8) and fiber drawing under a pressure to control or maintain the air holes in a gap between the glass preform and jacket tube (col. 19 lines 10-23). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the concave portions on the preform of Dai and to control the pressure within the gap between the preform and the tube in order to produce a microstructured optical fiber with holes.

4. Dai teaches a melting and molding method for forming the preform. It is known preforms made by casting or molding takes on the shape provided for by the mold. Jakobsen teaches using a mold with a predetermined shape to form the concave portions directly on the preform (col. 6 lines 28-31). Accordingly, in order to produce the

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concave portions as taught by Jakobsen in the preform of Dai, a it would have been obvious to one of ordinary skill in the art at the time of the invention to have expected a mold used for casting the preform of Dai to have a plurality of convex portions which run parallel to a longitudinal axis in succession in order to provide for a polygon columnar glass preform with plurality of concave portions in the cladding that run parallel to a longitudinal axis, as taught by Jakobsen, while utilizing a direct method and minimizing the processing of the preform.

5. Furthermore, Dai also does not teach a tellurite glass having the composition of $\text{TeO}_2\text{-Bi}_2\text{O}_3\text{-LO-M}_2\text{O-N}_2\text{O}_3\text{-Q}_2\text{O}_5$, where L is at least one of Zn, Ba and Mg, M is at least one alkaline element selected from Li, Na, K, Rb and Cs, N is at least one of B, La, Ga, Al and Y, and Q is at least one of P and Nb. Burger teaches a well known tellurite glass composition that encompasses the claimed composition and proportion of components ([0010]). It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the tellurite composition of Burger in the method of Dai and Jakobsen as Burger has taught that is a common composition for optical and acousto-optical glasses.

6. Although the specific property of a zero material dispersion wavelength equal to or greater than $2\text{ }\mu\text{m}$ is not specifically mentioned for the tellurite glass of Burger, it would have been obvious to one of ordinary skill in the art at the time of invention to have expected a similar property for the tellurite glass disclosed by Burger since the tellurite glass composition of Burger is similar to the recited limitation. Furthermore,

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Ohishi teaches that for tellurite glasses, a wavelength at which chromatic dispersion value takes on zero is in the wavelengths longer than 2 μm ([0019]).

7. Regarding claims 30 and 33, Dai does not specifically mention the removal the molded glass from the mold. However, it would have been obvious to one of ordinary skill in the art to expect a removal step of the glass preform from the mold in order to provide the glass preform needed for the second process.

8. Regarding claims 30 and 31, Jakobsen teaches a preform with any desired number of concave portions, such as 4 and that the placement of theses concave portions is substantially circularly symmetric with respect to the axis of the tube (col. 5 lines 44-47). A symmetric placement of 4 concave portion would result in a cross shaped profile of the cross section. Also, a preform with 4 concave portions inserted into a tube would result in an optical fiber with 4 air holes. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilized a mold with any number of convex portions, such as four, to produce the desired preform with desired number of air holes, such as 4, because it is known to select the desired number of concave portions to produce a fiber with desired number of air holes depending on the particular application of the optical fiber, as suggested by Jakobsen.

Response to Arguments

9. Applicant's arguments with respect to claims 20 and 30-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUEENIE DEGHAN whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/
Supervisory Patent Examiner, Art
Unit 1791

Q Dehghan